235g13

THE

ART

OF

FLOATING LAND,

AS IS PRACTISED IN THE

COUNTY OF GLOUCESTER,

SHEWN TO BE PREFERABLE TO ANY OTHER METHOD IN USE IN THIS COUNTRY;

WITH

A PARTICULAR EXAMINATION

OF WHAT

MR. BOSWELL, MR. DAVIS, MR. MARSHALL, AND OTHERS,

HAVE WRITTEN ON THE SUBJECT.

MINUTE AND PLAIN DIRECTIONS ARE AFTERWARDS GIVEN, FOR THE FORMATION OF A FLOATED MEADOW,

THREE DESCRIPTIVE PLATES.

BY T. WRIGHT,

AUTHOR OF LARGE FARMS RECOMMENDED.

LONDON:

Printed by J. RIDER, LITTLE BRITAIN.

SOLD BY J. SCATCHERD, NO. 12, AVE-MARIA-LANE; BY ALL THE LONDON BOOKSELLERS, AND BY MRS. JONES, OXFORD.

1799.


G.R. III.
BRITISH MUSEUM

CONTENTS.

	PAGE
A General View of the Art of Floating -	1
A Specimen of the Advantages of Floating -	14
Examination of Mr. Davis's Account of the Art	19
——————Mr. Marſhall's - - -	24
——————Mr. Boſwell's - - -	28
The Method of forming a Floated Meadow -	58
Deſcription of the Plates - - -	74
Directions to be obſerved in each Month of Floating	84
Anſwers to Objections - - - -	92

A

GENERAL VIEW

OF THE

ART OF FLOATING.

THE great utility of *watering*, or rather *floating* graſs-land, is now pretty generally known and acknowledged. The art, indeed, has of late met with a variety of zealous advocates. Almoſt all the agricultural ſurveyors of counties have warmly recommended it. The late preſident of the Board of Agriculture has paid it a due tribute of attention. Mr. Young in his Annals, has taken every opportunity of placing it before the public in a favourable light. Mr. Marſhall in his Rural Economy of the Midland

counties, has exhibited it to the world, as a "cardinal improvement," and "as the moſt ſcientific operation that has entered into the common practice of huſbandry." And Mr. Boſwell, by a voluminous deſcription of the Dorſetſhire practice, has very laudably contributed towards diſſeminating ſo much of the advantages and method of *watering*, as has induced many to attempt the execution of it; which attempt muſt, (whatever be the inferiority of his mode), prove an extenſive national benefit. Floating, however, is ſtill very partially practiſed, ſtill very generally miſunderſtood, and the true method appears to me to be rapidly degenerating into a mere *wetting* of the land. I have found moſt perſons with whom I have either converſed or correſponded on the ſubject, though they have profeſſed to have read Boſwell, Wright, and others; impreſſed with not only inadequate, but injurious ideas of the art: one, eſteems all water under this management, equally efficacious; another imagines, that more depends upon the nature of the land, than on the quality of the water;

another

another thinks, that the water is to be uſed chiefly in ſpring and ſummer; another ſuppoſes it poſſible to make great and extenſive improvements by a very ſmall quantity of water; and almoſt every one expects ſomething preternatural from this uſe of water in its pure elementary ſtate. Theſe miſconceptions, therefore, muſt eventually prove a powerful obſtacle to the growth of this very valuable branch of huſbandry. I have frequently been requeſted by gentlemen in diſtant parts of the kingdom, to ſend them men well acquainted with the art (from South Cerney, a village in Glouceſterſhire, which has long been, and ſtill continues, a very valuable nurſery for perſons of this deſcription) to float large tracts of land, where, when the floater has arrived, he has found the ſtream that was to accompliſh all this, diminutive enough, according to his own expreſſion, to flow through a pint cup; of courſe the work has either not been attempted, or, if the proprietor of the land has been hardy enough to perſiſt in the execution, diſappointment to the poſſeſſor, and diſcredit to the practice,

has in a great degree been the reſult. Indeed, in very few inſtances, in which I have ſent men for this purpoſe, has there been found water ſufficient to give an effectual covering to all the land, which has been thought capable of being floated. It is evident therefore, that what has as yet been written on the ſubject, has by no means given a preciſe idea of the practice, but has in ſome inſtances, had a worſe tendency.

I feel it a duty therefore, that I owe to a certain part of the community, again to ſtep forward and endeavour to point out the cauſes of theſe opinions evidently founded in errour; and thereby to counteract their injurious effects. For this purpoſe, inſtead of publiſhing another edition of my Treatiſe on Watering, I ſhall take new ground, adopt new terms, and give a deſcription as free as I can from provincial and technical words, and, if poſſible, not liable to miſconception. I ſhall endeavour to convey only one idea of the true objects of the practice, at leaſt the objects which the farmers in the county of Glouceſter,

ter, (where I am perſuaded that floating, has been practiſed as long, upon as rational a ſyſtem, and with as beneficial effects as in any part of this country), wiſh thereby to obtain, and which I will venture to aſſert, ought to be the only objects in every county, and in every ſituation, where the climate is as cold as that of England.

Any perſon who has read Mr. Marſhall's Rural Economy of Glouceſterſhire, or Mr. Turner's Survey of the County, will be ſurpriſed on reading the above commendation of the Glouceſterſhire mode of floating; for in all their circumſtantial and extended accounts of the huſbandry of the diſtrict, he has found little or nothing ſaid, of this very extraordinary method of fertilization [redacted]; tho' it has prevailed there more than a century. Mr. Marſhall has not even hinted at the practice, and Mr. Turner has mentioned it in a way, that makes it appear inſignificant.

Any

As I proceed I ſhall take the liberty of combating and contradicting many poſitions and aſſertions of different writers on this ſubject, which appear to me, to have been the principal cauſes of the too general miſconception of the practice; but more particularly of Mr. Boſwell, whoſe ſentiments have been more widely and ſyſtematically diffuſed, than thoſe of any other advocate in the cauſe.

I have in the title, and other parts of this treatiſe, ſubſtituted the term *floating*, in the place of that of *watering*, as more expreſſive of the thing intended. The word *watering*, I fear, has not contributed towards a clear conception of the buſineſs, but has given a notion of water uſed merely for the purpoſe of wetting the land, for which a ſmall quantity is ſufficient, whereas the true practice requires a complete ſheet of quick flowing water, at leaſt an inch deep or thick. Indeed, I do not know any one word that will give an adequate idea of the art. In the county of Glouceſter and in Wiltſhire, it is fre-

frequently called *drowning*, or winter drowning, but this runs into the oppoſite extreme, and denotes too much water in uſe, and ſeems to expreſs water kept in a ſtagnant ſtate, which is very pernicious, if ſuffered to continue any length of time.

Floating, in my opinion, comes neareſt to expreſs what is meant by the practice in its moſt complete ſtate. I lay the more ſtreſs on this point, that I may, if poſſible, divert the attention of thoſe who wiſh thus to improve their land, from ſmall rivulets and ſprings, and fix it on a more ample ſource of manure. I wiſh to turn the thoughts of men of property, to rivers larger even than any that have hitherto been made ſerviceable in this way, and the improvement, they will find, will be proportionally large. For the water of every copious and rapid ſtream, is loaded with manure of the moſt fertilizing quality; with this water, it is poſſible to make land almoſt as rich as you pleaſe, whatever be the nature of the ſoil, or of the ſubſoil, without attending ſo nicely to ſyſtem as you neceſſa-

neceſſarily muſt, when clear ſpring water is uſed; and by this water, an entirely new ſoil is given to the land in a few years.

If therefore many large rivers are made manageable by the expenſive proceſs of embankments, wears, pudling, &c. merely to work corn-mills, why ſhould not the ſame means be uſed to obtain a greater object? for I am confident, that in many ſituations, water may be made of much more extenſive utility, in floating land, than in working corn-mills. Inſtances, in proof of this aſſertion, might be adduced from various rivers on which this practice prevails, but a convincing one occurs on the river which is my chief ſcene of action, I mean the river Churn, which is a branch of the Thames, and flows through Cirenceſter, in the county of Glouceſter. On this river, the mills are numerous and valuable, but the improvement made by this ſtream in floating, is of mnch greater value. The mills within the diſtance of five miles, are ten, and are let for about 40£. each per ann. but the

acres

acres floated, within the ſame diſtance, are 1000, and each acre is improved two pounds in annual value, independent of the extra manure, thereby afforded to other land.

The ſuperiour advantage therefore of floating, compared with the product of the mills, is as £.2000, to £.400, and would be greater, if the mills did not operate as an obſtacle to the art, by claiming an excluſive right to the uſe of the water, and of courſe taking it from the meadows at pleaſure, and at very critical times. In ſome ſituations, however, there is water enough to ſerve both the purpoſe of the mill, and of the meadow; and it ſeldom happens but that, where a mill can be thus worked, there a certain quantity of contiguous land may be floated. Whenever I paſs by a rapid river, therefore, and ſee no uſe made of the many tons of rich manure that are ſuſpended in its waters, and are thereby irrecoverably carried into the ocean, I cannot help feeling this as a momentous loſs to the community.

I do not, however, here pretend to reject, or wiſh to depreciate the uſe of ſmall rivulets, or ſpring water in floating; for in many inſtances, where ſkilfully managed upon good land, ſuch water will be found highly beneficial, particularly that which has paſſed thro' ſtrata of chalk. I only mean to ſay, that the effects of ſuch water cannot be ſet in competition with thoſe ariſing from the water of large ſtreams; and that nothing very great, or very valuable, can be accompliſhed in this, or any other agricultural proceſs, without manure in ſubſtance. It is true, that any, even the thinneſt water will, in a favourable ſpring, force a crop upon the pooreſt land, but this crop muſt be, as the land, of an inferiour quality, for no one ever yet found good graſs, or good hay upon bad land.

It may here be expected, before I proceed to take ſtill greater liberties with, what I call, the miſconceptions of others, that I ſhould declare what I mean by floating, or ſtate what are the objects and eſſentials of that

that mode to which I give ſo unreſerved a preference.

The primary objects of floating, are, I aſſert, ſimply theſe two, to *procure a depoſit of manure* from the water uſed, and by the water at the ſame time, to *ſhelter* the land from the ſeverity of winter. And the chief eſſentials of the art, are, that the water ſhall be made to flow over the ſurface of the land, *an inch deep*, during winter, and that no part of the works ſhall be made *upon a dead level*. Without attention to theſe two laſt requiſites, the above objects, to which all others are ſubſervient, cannot be fully obtained. For if the water does not flow an inch deep, you do not uſe as much water as might be effectually ſtrained or ſifted by the graſs, and of courſe do not collect as much mucilage as might be collected, nor give a complete ſhelter to the land. If you uſe much more than an inch depth, and continue it for ſeveral weeks, you deſtroy your beſt graſſes, which will not bear to be entirely under water for many weeks in ſucceſſion.

ceſſion. And if any of the ditches are cut upon a dead level, a great part of the water will be kept in a ſtagnant ſtate, depoſiting its ſediment in the ditches, more than on the ſurface of the meadow, and ſoaking into, and chilling the land. If, however, you can ſo form your meadow as to uſe the above quantity of water, on the whole, or a part of the land, and each part has a regular deſcent; the meadow will enjoy every encouragement and protection which graſs-land is capable of receiving from the care or culture of man.

Indeed, if you exclude the chilling blaſts of winter, any land that is in tolerable heart, will continue to encourage vegetation even in the month of January; but when you not only ward off the effects of wintry winds and froſts, but are inceſſantly applying manure of the richeſt quality to the roots, and round the ſtems of the graſs; it may reaſonably be expected, that vegetation will be kept up in a high degree, though the ſeaſon be intenſely ſevere.

It may here be aſked, will not ſpring water anſwer the two above-mentioned purpoſes? I allow that it will completely anſwer the latter, but not the former purpoſe. It will afford the ſame ſhelter to land that river water does, and though it be apparently ever ſo clear, yet the graſs acting upon it as a fine ſieve, will collect from it ſome ſubſtantial manure, but this manure will not only be much leſs in quantity, but very inferiour in quality. Were it practicable to float land with the water that daily flows through London Bridge, I am perſuaded, that ſuch uſe of it, for only two weeks in a ſeaſon, (one week to be taken at the beginning, the other at the end of winter), would render the land thus overflowed, more productive than a whole winter's regular watering, with any the moſt favourable ſpring water. The quantity of mud collected from the Thames water, even in this ſhort ſpace of time, if it were made to flow with a proper degree of rapidity, would be very conſiderable, and its quality any one can judge of.

Specimeu

Specimen of the Advantages of Floating.

On the advantages of floating, I hope it is no longer neceſſary to expatiate; but I have lately met with ſo pregnant an inſtance of its ſuperiour excellence fallen in my way, that I ſhould by no means do juſtice to the ſubject if I witheld it from the public. It is an inſtance, which tends to place the moſt engaging feature of this practice in a ſtriking point of view, and gives to the production of early green food its proper weight and worth. Indeed the moſt valuable, and I had almoſt ſaid, the only improvements of magnitude that have of late years been made, here, in agriculture, have been in the various proviſions of green food, afforded for the neceſſity of winter, and for the more preſſing wants of the two firſt months of ſpring. In this ſeries of improvements, I beg leave to claſs this relative art, which, though it cannot, in every ſituation, be ſo widely extended as the cultivation of turnips,

rape,

rape, cabbage, lucerne, &c. yet, where it can be fully executed, it will in no wiſe diſgrace the relationſhip in which I have placed it, but will afford it abundant aid and ſupport. For floated meadows not only require no manure from the farm yard, but liberally encourage the plough, by affording an annual extra ſupply of manure: and although by this practice, the farmer cannot provide green food for all the months of winter, yet he can, thereby, conſiderably ſhorten the wintry void; for in March and April, which are the two moſt trying months to the farmer, theſe meadows are covered with graſs enough to receive any kind of ſtock, if the weather will permit.

The ſtrong proof of the great utility of this practice, which, I above allude to, is this. Having heard that the proprietor of an old floated meadow, in the village which I have had occaſion to mention before, had diſpoſed of the produce of it, in the year 1795, in a way that was well calculated to aſcertain its real value, I wrote to a perſon

who

who reſides on the ſpot, requeſting him to ſend me a particular account of the product of the meadow, and I received the following ſtatement:

In order to make the moſt of the ſpring feed, the proprietor kept the graſs untouched till the ſecond day of April, from which time, he let it to the neighbouring farmers, to be eaten off in five weeks, by the undermentioned ſtock, at the following rates per head: a ſheep 10d. per week, a cow 3s. 6d. a colt 4s. The quantity of the land is eight acres.

			£.	s.	d.
107 Wether ſheep,	one week	-	4	9	2
8 Cows - -	ditto	- -	1	8	0
4 Colts - -	ditto	- -	0	16	0
			6	13	2
					5
	Total of five weeks		33	5	10
3 Colts, 3 weeks to be added			1	16	0
	Total		35	1	10

After this ſtatement, my correſpondent, ſenſible that it is this ſpring crop which principally claims the attention of the public, and on which I ought to lay peculiar ſtreſs in recommending the practice, diſmiſſes the ſubject with ſaying, that the hay crop was as uſual, about fifteen tons, and was ſix weeks in growing.

The above ſum, it ſhould be obſerved, was made by the owner of this meadow, at a time, when other graſs-land is in a dormant ſtate, or exhibits but feeble ſymptoms of vegetation. He had received more than four pounds an acre for his land, when his leſs fortunate neighbours were only looking forward to two future crops, in which expectation he has at leaſt an equal proſpect with them.

But the reader will perhaps ſee the advantages of this art, in a ſtill ſtronger light, when he is told, that this meadow, which is now in the occupation of a miller, was a few years ago in the hands of a farmer,

who, being at variance with the miller, was entirely deprived of the uſe of the water, for a whole winter, which unfortunately was ſucceeded by a very dry ſpring and ſummer; of courſe the ſpring-feed was loſt, and the whole hay-crop of eight acres, was only three tons.

Such a ſpecimen of productiveneſs as the above, one would hope, will carry ſufficient weight with it, to turn the ſcale againſt any objections to the practice, ariſing from a dread of expence, or from an averſion which many entertain to, what they ſtyle cutting their land to pieces; and will prevail upon every one, who poſſibly can, to adopt this mode of improving his land. I truſt likewiſe, that the above inſtance of fertility, will be eſteemed a proof that this is not merely book-farming, but is worthy the attention of real practical farmers; and in confirmation of this, I could adduce ſeveral inſtances of *renters* of land, having profitably expended ſeveral hundred pounds in forming meadows of this kind, without any allowance from their landlords; than which, a

more

more clear demonſtration of the great utility of floating, in my opinion, cannot be given.

Examination of Mr. Davis's Account of Watering.

Before I proceed to make my Obſervations on certain parts of Mr. Boſwell's Treatiſe on Watering, which appear to me to be at variance with the true practice, and which will neceſſarily be rather numerous; I ſhall take the liberty of pointing out a few errors, which I have diſcovered in Mr. Davis's and Mr. Marſhall's account of the art.

Mr. Davis, in his Agricultural Survey of Wiltſhire, in deſcribing what he calls flowing meadows, ſays, p. 33, " It is uſual to make the ridges thirty or forty feet wide, or, if water is abundant, perhaps ſixty feet." This is a fundamental miſtake, and ſhews that Mr. Davis is not ſo compleatly maſter of this art as he ſeems to be of almoſt every other branch of huſbandry. It is, in other

words, ſaying, that the more water there is, the leſs is uſed. Or, where water is not abundant, uſe it freely, ſtrain or ſift it only over narrow beds; but where it is abundant, make the moſt of it; ſtrain or ſift it over wide beds, and detain it twice as long in the meadow as you do in the other caſe.

Where water is abundant, I inſiſt upon it that no ridge ſhould be made ſixty feet wide; none ſhould be wider in this caſe, than twenty-four feet. I am glad to hear from the Glouceſterſhire Floaters, who have been ſome years laying out large tracts for the Duke of Bedford, that where they have a tolerable quantity of water, they have been allowed to put in practice the true ſyſtem; and to make their beds only four yards wide, which is eight yards to the ridge; for it is not every employer that is ſatisfied with this ſhort uſe of the water, or that will ſuffer this free cutting of the land.

P. 37, Mr. D. ſays, " In autumn watering, if water can be commanded in plenty, the

the rule is to give it a thorough good ſoaking at firſt."

Mr. D. could not have uſed a more improper word, in this inſtance, than that of ſoaking, which is by no means an eſſential part of the ſyſtem in autumn and winter. Soaking, I grant, is an unavoidable, but it is at the ſame time, an injurious attendant on the practice in the cold ſeaſon. Why do Mr. Davis, Mr. Marſhall, and Mr. Boſwell, lay ſo much ſtreſs upon the good effects of an abſorbent bottom in watering? but merely becauſe ſuch a ſub-ſoil is the ſooneſt free from the chilling effects of ſoaking water. I do not think it neceſſary, or favourable to vegetation, that the land under this proceſs, ſhould, during the winter months, imbibe even one drop of water: and, I am perſuaded, that if a floated meadow could receive its uſual manure and ſhelter, by any other medium than a fluid, that the herbage would be more valuable than it is at preſent.

" This firſt ſoaking," Mr. D. afterwards ſays, " is to make the land ſink, and pitch cloſe

cloſe together." How land that has been compreſſed for ſeveral weeks by the heavy treading of cattle, can be made to ſink ſtill cloſer together by means of water thrown over it, I cannot conceive. If Mr. Davis had ſaid that water was uſed more freely in autumn than at other times, in order to collect as much mud as poſſible, I ſhould perfectly have co-incided with him in opinion.

Mr. D. in the ſame page, ſays, " when the the water is taken off, then the works are made as dry as poſſible, to encourage the growth of the graſs." But it will be found, that the graſs will ſeldom grow at this ſeaſon when deprived of the ſhelter which is afforded by the covering of the water, and if the weather is not mild, it will often ſhrink and loſe ground.

Mr. Davis again adds, " While the graſs grows freely, a freſh watering is not wanted, but as ſoons as it flags, the watering may be repeated for a few days at a time." Here Mr. D. appears to me, to fall into the common errour, of attributing the very eſſence

of

of this practice to a mere wetting, or according to Mr. Boſwell, p. 32, to a "refreſhing of the land with water."

Theſe two laſt quotations, it will be obſerved, contradict each other; for in the firſt inſtance, the land is made dry to encourage the growth of the graſs, and in the ſecond, it is made wet for the ſame purpoſe: but I have not introduced them from the captious motive of exhibiting an inconſiſtency in the words of a ſuperiour agricultural writer, but, becauſe I think they may materially affect the practice. For, although the proceſs of watering has that alternacy which Mr. D. has juſtly remarked, yet this change from wet to dry, and dry to wet, is not made, I preſume to ſay, for thoſe reaſons aſſigned by Mr. Davis. In the former caſe, the land is made dry to give it air, to prevent the rotting of the roots of the graſs, and to hinder the generating of that ſcum which would ſoon deſtroy every blade: and in the ſecond inſtance, the water is thrown over again, to collect mud, and to ſhelter the land.

Exam-

Examination of Mr. Marſhall's Account of the Art.

Mr. Marſhall, in his Rural Economy of the Midland Counties, in deſcribing watered meadows, vol 1. p. 226, ſays, "The warmth communicated by running water to the graſs it flows over, is the beſt account that the moſt enlightened in the art can give of its good effects." If this be true, the ſecond, third, and fourth uſe of the ſame water, will be as enriching to the land in every inſtance as the firſt uſe, which is known by every practical man never to be the caſe. If this be true, we have nothing more to expect from floating than a mere excitement of vegetation, without any additional ſupport given to the ſtaple of the land, to enable it to anſwer and bear up under this unuſual force. If I were not very well aſſured that far more ſubſtantial aid is afforded by this practice to the land, I ſhould not have taken the liberty, or thought it worthy the pains of writing a recommendatory book on the ſubject.

ſubject. Of what uſe, let me aſk, can it be to ſtimulate, and exhauſt, land that is already poor? But it is, I am ſorry to ſay, too much the faſhion of the preſent day, encouraged by the generality of agricultural writers, to force land beyond its ſtrength.

P. 228, Mr. M. ſays, "It being impoſſible in practice, to render the ſheet of water throughout of a uniform depth or thickneſs."

If Mr. M. when he was in Glouceſterſhire, for the purpoſe of inveſtigating the huſbandry of that part of the kingdom, had ſeen the floated meadows in the vicinity of Cirenceſter, (and it is truly ſurpriſing to me, that he could reſide twelve months ſo near them, without either ſeeing them, or hearing of them,) he would not have made the above remark, for he would, there, have ſeen hundreds of acres, in the old meadows, under ſheets of running water never perceptibly varying half an inch in depth.

P. 235, Mr. M. ſays, " Mr. Bakewell ſtudied the art of watering, in the principal ſcene of buſineſs, the Weſt of England, under Mr. Boſwell."

I have heard, from authority which I have no reaſon to doubt, that Mr. Bakewell, firſt learnt the art of floating at South Cerney, in Glouceſterſhire; and, that " the Weſt of England is the principal ſcene of buſineſs" in this way, I will not allow; till Mr. Marſhall, has produced a ſpecimen of greater fertility, ariſing from the Dorſetſhire method of watering, than that which I have given as the effect of my favourite mode.

Mr. M. afterwards ſays, " that watering is not merely a ſtimulus, or force, but communicates, real nutriment to the herbage."

I am very happy to find Mr. M. here relinquiſhing his very untenable poſition, that every thing in this practice, is to be attributed to warmth, communicated by the running water.

But,

But, I truſt, when this ſubject has been more amply diſcuſſed, and the plan more generally adopted, that the more ſubſtantial ground of real nutriment attrated and ſeparated from the water, will be univerſally received.

Mr. Marſhall in his Rural Economy of the Southern Counties, v. 2, p. 333, ſpeaking of the watered meadows, near Saliſbury, obſerves, " That the the ſoil is moſtly thrown into ridge and furrow; with *deep* floating trenches on the tops of all the ridges, whether long or ſhort." And again, p. 334, large *deep* floating trenches on the ridges; narrow drains in the furrows."

This ſhews a great defect in the Wiltſhire plan, if Mr. Marthall's account be correct. Theſe trenches, or floating-gutters, ought never to be made deep, nor ought the drains ever to be made narrow, when their correſponding trenches are large.

P. 333, Mr. M. aſks, " Does the water retained in theſe deep trenches, convey nu-

triment to the ſoil and ſubſtrata? or give them more readily a plenitude of moiſture?"

To this queſtion, every practical floater will reply, that the nutriment ſhould be conveyed to the ſurface only; and that the ſoil, and ſubſtrata, are always wet enough, without the ſoaking of this injudiciouſly retained water.

Examination of Mr. Boſwell's Account of the Art.

Mr. Boſwell, p. 6, commences with, and founds the chief ſtructure of his Treatiſe upon, what appears to me, a falſe principle, the attributing the excellence of floating, more to the nature of the land floated, than to the quality of the water uſed. In the ſcale of productiveneſs, he gives the precedence to gravelly, or ſandy ſoils; in the ſecond rank he places, boggy, and ruſhy land; and in the laſt claſs, ſtrong, cold, clay land. For a few years, I grant, the difference of ſoil may have a conſiderable effect, but after a continuance

ance of floating, good water will form for itſelf, a good new ſoil. I could ſhew Mr. B. all theſe ſorts of land upon one and the ſame ſtream, under the ſame management, and each equally productive. I could ſhew him in the ſame floated meadow, gravelly, boggy, and clay land, without any apparent difference in the crop.

The floaters in Glouceſterſhire, when conſulted on the practicability and probable advantage of the art, in a ſituation which they are unacquainted with; never aſk, or care, what the land is, provided there is a copious ſtream, and a quick deſcent in the meadow. Give them plenty of water that is enriched with the waſh of a village, or of a fertile country; and fall enough to keep every drop in motion, and they will pledge themſelves to make every acre of land, ſo circumſtanced, worth three pounds a year.

P. 10, Mr. B. ſays, he "Knows a conſiderable tract of land, and one meadow in particular, that is watered by ſprings iſſuing imme-

immediately out of a fine ſpringy gravel, without any advantage from great towns, &c. being ſituated but a ſmall diſtance below the head of the rivulet, and the rivulet itſelf is fed all the way by ſprings riſing out of its bed as clear as cryſtal." "Whether," he adds, "It is from the heat of the ſprings, or whether the friction by the water running over the ſoil, raiſes a certain degree of warmth, favourable to vegetation, or from whatever cauſe it ariſes, the ſecundity of this water is beyond conception."

This, and a like aſſertion of Mr. Boſwell's, p. 14, ſupported by ſimilar expreſſions of other writers, has given, to thoſe who are unacquainted with the practice, too great reaſon to expect the moſt extraordinary effects, from this uſe of the pure elementary fluid, and to eſteem it, not as a *vehicle* or *ſource* of manure, but *as a manure of itſelf*. This idea I am ſorry to ſee corroborated by Mr. Bailey in his Treatiſe on Manures; when he ſays, "In floating, water is uſed *as a manure*."

Mr.

Mr. Boſwell's notion of the efficacy of the friction of the water, ariſes, I preſume, from his obſerving that thoſe parts of a meadow are invariably the richeſt, on which the water flows with the greateſt velocity. This inequality of fertility, however, may be accounted for, on more ſubſtantial ground, than on the principle of warmth communicated by friction; for where the water flows with rapidity, you of courſe, uſe twice as much as you do, on the ſame quantity of ſurface, where it moves ſluggiſhly; and if there is any thing ſubſtantial to be thus collected from the water, two tons will doubtleſs afford more mud than one can give.

Mr. B. in continuation, adds, p. 11, "And although the water is ſo exceeding clear, yet upon its being thrown over the land, only for a few days in warm weather, by dribbling through the graſs, ſo thick a ſcum will ariſe, and adhere to the blades of the graſs, as will be equal to a conſiderable quantity of manure ſpread over the land, and (it

(it may be preſumed from the effects) ſtill more enriching."

Mr. B. I believe is the only perſon, who has attentively conſidered this ſubject, that will allow this ſcum in any inſtance to be enriching to land. In every example that I have ſeen, or heard of, it has been found *poiſonous* to the graſs. If ſcum were conducive to fertility in a floated meadow, every flat or low part of the beds, where the water runs ſlow, and where the ſcum is generated in the greateſt abundance, would invariably be the moſt fertile; but this, experience tells us, is never the caſe. This ſcum appears to me, to be a mere collection of ſmall bubbles of ſimple water, which adheres to the blades of the graſs.

P. 16, Mr. B. ſays, "The Dorſetſhire watermen, except in large undertakings, diſpenſe with the uſe of the water level, bringing the water after them to work by."

It muſt doubtleſs be a more certain, more expeditious, and leſs expenſive plan to take an accurate level of the land, before any advance is made in the work. There is ſcarcely one of the floaters which I have mentioned, that does not carry with him a ſpirit-level; this he thinks as neceſſary a part of his apparatus, as his water-proof boots.

P. 28, Mr. B. ſays, " Every inequality in water meadows, ſhould either be levelled down, or filled up."

This direction muſt be regulated by the expence, which is the moſt powerful enemy that this practice has to contend with; for it often happens that a twentieth part of a meadow, may coſt more in being levelled down to the general ſurface, than all the other parts in being effectually floated. In every inſtruction that I give, I ſhall cautiouſly avoid the rock of expence. I know many farmers who wiſh to preſerve a ſmall eminence in their meadow, for the cattle to reſort to, in a rainy night, both to prevent

he treading of the graſs, and to accomodate the cattle.

P. 29, Mr. B. ſays, "The water having been ſo very lately ſtrained over the ground, it is ſuppoſed by the watermen to be not ſo enriching as it was before it was uſed."

This is not a mere ſuppoſition of the watermen, but is a principle in the Art of Floating which ought upon every occaſion to be peremptorily inſiſted on, although it may be at variance with ſome parts of Mr. Boſwell's Syſtem. Indeed, not only is the bed which receives the firſt water, more fertile than thoſe that have the ſecond or third uſe of it, but the upper part of every bed is richer than the lower part; eſpecially where it is made more than four yards wide. Of this, the cattle, when turned into the meadow, will give an incontrovertible proof, by leaving the graſs on the lower part untouched, till that on the upper part, which is always more luxuriant, is entirely eaten off.

P. 31, " The larger the body of water that can be brought upon very boggy land, the better. Its weight and ſtrength will greatly aſſiſt in compreſſing the ſoil."

I agree with Mr. Boſwell, that it is very advantageous to boggy land, to have a large body of water brought upon it when it is firſt formed for floating; for the more ſtrong and rude the current, the more mud, ſand, or gravel, will be carried upon the meadow; matter of this kind, however coarſe it may be, will greatly improve the land, by giving it that ſtability and ſoundneſs which are ſo peculiarly requiſite to a ſurface of this kind. I cannot however, conceive that boggy land, though Mr. B. has frequently repeated it, can be compreſſed by a ſheet of water; for, to me, it always appears to be dilated by water, as a ſponge is.

P. 54, Mr. B. ſpeaking of the Dorſetſhire watermen, ſays, " Beſides, though many workmen may be met with exceeding clever in the execution, and even in the direction

of the work, yet, in general, ſo confuſed are their ideas, that they are unintelligible, and their mode of directing, unſatisfactory; being moſtly conducted without a plan, and executed as incidental circumſtances ariſe, ſtill blundering on with the work they have begun, many trenches and drains are cut improperly. The reſult of all which is, an incomplete performance at firſt, and every year after emendations and alterations follow; ſome for the better, but many for the worſe, to the great disfiguring of the meadow; extraordinary expence to the owner, as well as betraying the ignorance, or want of ſkill in the undertaker."

Whether this charge of incapacity be applicable, or not to the Dorſetſhire watermen, I cannot ſay, but that it does not apply to the Glouceſterſhire floaters, I have no heſitation in affirming. I am perſuaded that any one of theſe floaters, who, has been regularly brought up in the practice, would give a clearer idea of it, in one hour's converſation on the ſpot, than Mr. B. or I can,

by

by writing volumes on the ſubject. Indeed, I have ſcarcely ever ventured to give one poſitive direction relative to the art, either in my preceding Treatiſes or the preſent, without firſt conſulting theſe practical men, on its propriety. On this ground, I have expreſſed myſelf with the more confidence, conſcious that I have adviſers, who have executed the work, and ſeen its effects, under almoſt every variety of circumſtances that can occur in this Iſland. For I can, with no ſmall degree of ſatisfaction, ſay, that I have been inſtrumental in ſending theſe men into various parts of Wales and Scotland, as well as England, and hope very ſoon to receive further commiſſions for this purpoſe.

P. 65, Mr. B. ſays, " The more ſurface there is in the panes, the more water is requied to flood them;" and again, p. 25 and 75, " the width of the trenches that convey the water varies according to the breadth of the panes.

By pane, Mr. B. means, what I have called bed, and by trench, a floating-gutter.

If

If he wil re-conſider the above aſſertions, he will immediately diſcover, that the *breadth* of the pane, or bed, by no means determines the *width* of the trench or gutter, or the quantity of water that is required; for a bed of only one foot width will conſume as much water as a bed of thirty feet, provided the water flows in both caſes with the ſame depth and velocity. The quantity of water will depend in a certain degree, upon the *length* of the bed, but not upon its *breadth*. A broad bed will uſe the water a longer time, but will not take more water.

P. 86, " In erecting wears, &c. " Mr. B. ſays, " Clay muſt always be avoided, it is worſe than the common ſoil."

Clay has almoſt invariably been uſed for this purpoſe in Glouceſterſhire, and is found to anſwer very well, where it is not outſide work, and expoſed to the froſt.

P. 98, Mr. B. ſays, " The trenches, drains, &c. will, if the land is pretty firm, by

by thus repairing, do their offices three years; otherwiſe not more than two.'

I cannot conceive what defect it is, in the conſtructing of the Dorſetſhire trenches and drains, that makes them thus liable to fail in two or three years; for all the ditches and works formed according to the Glouceſterſhire mode, will laſt for ages, with only a little repairing after the treading of the heavy cattle.

P. 104, "When the water is low, keep it together, rather uſing it to water only two or three trenches well, than letting it run down to the tails of many, which rots the ground there, and does no good at any other part."

This is an excellent rule of Mr. Boſwell's, and if the other parts of his book were conſonant with this, the difference of our plans would have been too inconſiderable to have called forth this particular notice.

P. 106,

P. 106, " About a week before the graſs is to be mown, let the water into it, for about twenty-four hours, it will make the ground moiſt at the bottom, the ſcythe will go through it eaſier, and it will be mown the cloſer for it."

This is a very improper direction on ſeveral accounts. The water thus let in, though it be ever ſo clear, will leave a filthy ſubſtance on the graſs very injurious to the hay; it it will make the ground too ſoft, to bear the carriages loaded with the hay; and will give a wetneſs to the land, which will occaſion the hay to be at leaſt a day longer in making than it would have been, if the land had been perfectly dry, which in ſome ſeaſons, may not only injure, but ſpoil the whole crop.

P. 106, " The feeding the meadows about Lady-day, is called ſpring feeding, and ſhould never be done by any other cattle, beſides ſheep and calves."

A dairy farmer will totally diſregard this reſtriction, convinced by experience, that, if the meadow is laid dry before the cattle are admitted, the harm that can ariſe from their treading, is by no means worthy of compariſon with the great advantage, which a hard-wintered ſtock of cows will derive from ſuch graſs, at ſuch a ſeaſon.

P. 112, " In this manner the after-graſs will, in a mild ſeaſon, laſt the cattle till Chriſtmas."

I anſwer that the after-graſs ſhould never be left uneaten till Chriſtmas; the meadow ſhould be prepared to receive the water at the beginning of November.

In the above page, Mr. B. ſays, " The after-graſs ſhould not be fed by ſheep. It will infallibly rot them in this county."

The after-graſs, in the generality of floated meadows, which I have ſeen, will not endanger the ſoundneſs of the ſheep which

feed upon it, unleſs water has been thrown over the meadow in ſummer. I had frequently been told that watering even for one day in *ſummer*, would render any meadow an unſafe paſture for ſheep in the autumn; to this aſſertion, I did not give credit, till a few years ago, when I had an opportunity of aſcertaining the fact, in a meadow, which I rented purpoſely for the ſake of making this, and other experiments.

P. 114, Mr. B. begins his 15th. chapter, in which he confines himſelf to a review of my firſt publication on watering; and for the obſervations which he has there made, I am ſo far from thinking his apology neceſſary, that I wiſh, inſtead of inſinuations, he had proceeded to direct animadverſions, or open contradictions, where he thought me erroneous. This appears to me, the mode beſt calculated to bring forward and eſtabliſh the truth; which, on all occaſions, great or ſmall, is too valuable to be ſacrificed to the complaiſance of ſcribblers.

In

In my Treatiſe which was publiſhed in the year 1789, deſirous of ſhewing, what I ſtill find it neceſſary to contend for, that the effects of *ſpring water* are very inferiour to thoſe of *thick or muddy water*, I gave two inſtances of meadows, that were watered from ſprings which aroſe in the grounds themſelves; and aſſerted that though the crops in theſe meadows were early and plentiful, yet, they were *not of a good quality*, and that the *land* remained unimproved after many years watering.

To this my doctrine, Mr. Boſwell, oppoſes "contrary effects from a ſtream, very near the ſpring head, as clear as cryſtal;" and unfortunately this oppoſition and his attempted confirmation of it, Page 115, has been tranſcribed into the Encyclopædia Britannica, and has given birth to the following more dangerous remark of the editors of that valuable book of reference: "From this paſſage," they ſay, "the latter part of which is not very intelligible, we might

conclude that Mr. Boſwell, prefers clear to muddy-water for overflowing meadows."

Mr. Boſwell, certainly does not intend to ſay ſo much as, is here intimated. By " contrary effects," he cannot mean to ſay that the converſe of my whole propoſition is true. He muſt only wiſh to ſay, that he knows an inſtance of a meadow, floated by clear water, producing crops of a good quality, and having its land improved by by this water. This is undoubtedly ſaying a great deal too much, eſpecially when oppoſed to the effects of muddy water; for, to ſay nothing of the inequality of the crops, if watering were entirely to ceaſe, Mr. B. would find the ſtaple of his land, neither ſtronger, nor richer than it was, when this clear water was firſt brought over it. But, diſcontinue floating on a meadow, which has had the advantage of muddy water; and its ſoil will be found to have received an addition that will prove a permanent amelioration. Examine every effect of theſe two kinds of water, and in no ſingle inſtance will

will it be found, that the former is preferable o the latter; but, if there be any valuable ſtimulus, force, ſhelter, or encouragement in clear water; muddy water likewiſe has all theſe, and gives that ſtrength and power beſides, which, are always neceſſary to render the crop, that is produced, *good in quality*. Perhaps the introduction of the following facts, may ſerve, in ſome meaſure to illuſtrate what I have aſſerted on this point. About ten years ago, a perſon from South Cerney, entered upon a farm in the neighbourhood of the well known ſtream of Bibury; where he had the ſatisfaction of finding a large meadow already watered; but he ſoon found, likewiſe, that its graſs, and the hay made from it, were by no means ſo nutricious as he had elſewhere ſeen them. Certain of the improvement that might be made, from this copious ſtream, at leaſt in the quality of the graſs, he proceeded to make the following amendments: wherever he found a wide bed, he divided it into two; he increaſed the width of his conductor, in order to admit more water; and ſunk the bottom

bottom of it to the bottom of the ſtream, to draw in the more mud, which, he took care frequently to diſturb, with iron rakes made for the purpoſe; and by theſe means, he informed me, he improved the meadow to twice its former value. Not content with this, he contrived, the year following, to carry a part of the ſtream through his farm-yard, which was conſtantly filled with a large ſtock of cattle and pigs, and with this water he floated nearly an acre of this meadow. The effect of this laſt proceſs, I went purpoſely to ſee, and found, at the beginning of the month of April, that the ewes and lambs had been turned into the meadow two days, where they had ſhewn a nice diſcrimination between the graſs upon the above acre, and that on the other parts of the meadow: they had eaten the graſs, where this foul water had run, to the very roots, and had walked over all the other parts, almoſt without taſting, though the graſs was luxuriant and fine, and the land in a very improved ſtate. This convinced me, that one mouthful of the graſs on the former part,

part, was almoſt as valuable as two of the latter, and that the quality of the graſs will always be as the water.

In my treatiſe, I had mentioned a temporary wear, or dam; and Mr. B. has ſaid p. 116, that ſuch a dam " would not, in Dorſetſhire reſiſt the force of the water five hours, in ſtreams that are not more than three or four yards wide;" and reprobated ſuch dams for other following reaſons:

By " a temporary wear, or dam, I did not mean one of any particular conſtruction, either weak or ſtrong, but, according to the common meaning of the word *temporary*, ſuch a wear or dam, as might ſtop the courſe of the water whenever occaſion required. Mr. B. may ſee that the wear which I now recommend, and have given a ſlight ſketch of in plate 2, though more ſimple, and far leſs expenſive, is equally ſtrong with that which he has taken up fifteen pages in deſcribing.

In

In the direction which I gave for watering in the month of February, I mentioned the danger to be apprehended from the poiſonous effects of ſcum, and the deſtructive ſeverity of a froſty night, and pointed out the uſual and ſkilful method of the Glouceſterſhire Floaters to avoid the injury from either quarter; which was to take the water off in the day, and to turn it over again at night. This direction Mr. B. ſeems to think not only extraordinary and unneceſſary, but, for ſeveral reaſons, impracticable. Taking the water off," ſays he, p. 117, " and turning it over at night in froſty weather, where there are 300 acres to water by one ſtream, appears to be a very extraordinary direction, and in the country where this treatiſe is written, would be quite impracticable."

It was ſhewn in ſeveral parts of my book, that theſe 300 acres were divided into ſeparate meadows; which lay in ſucceſſion, on both ſides of a rapid ſtream. It was there likewiſe intimated, that each meadow (whether the whole, or a part of it was watered at one

at one time) quickly threw back the water into the ſtream, and that the proprietors of the lower meadows did not ſuffer any one of the meadows above them, to take the whole of the ſtream, or, as they ſtile it, the whole of the beſt water; and alſo that leſs water is now required, than in an earlier part of winter. Meadows, therefore, thus ſituated and circumſtanced, are almoſt independent of each other, with reſpect to the quantity of water, and, the number of acres will be no real impediment to the adoption of the above proceſs.

Mr. B. afterwards adds, "when the water is turned out of one meadow, it is often half, and ſometimes a whole day, before it riſes high enough to flow ſufficiently over another meadow, to ſpread it properly over all the works."

This ſhews that the Dorſetſhire meadows are conſtructed too much upon the dead-level

plan, and that the water is extended too far. I do not, however, ſee, how this is reconcileable with what Mr. B. aſſerted in the preceding page, that the "force of theſe ſtreams was ſo great, as not to be reſiſted, for a few hours, by temporary wears or dams." Mr. B. muſt have confounded two ſtreams, for, ſuch oppoſite effects, cannot be attributed to one and the ſame current. A meadow formed on the plan which I recommend, may be freed from the water in ten minutes, and, if not larger than ſeven or eight acres, will be completely overflowed in leſs than an hour. This time in overflowing, will of courſe, depend on the greater or leſs degree of deſcent in the meadow.

Mr. B. then ſays, "The ſun's warmth is ſeldom found ſtrong enough to have any effect upon the water in the month of February. It is not uncommon in that month to have the water kept upon the meadows a fortnight, or more."

In

In ſome ſeaſons, I allow, the warmth of the ſun is not very ſtrong in the month of February; in others, however, it will be found too powerful an agent in the generating of ſcum. The above rule was given to be obſerved, when froſty nights prevail, and in ſuch weather, the days are generally clear, and the ſun has conſiderable effect. It appears from other parts of his book, that Mr. B. has not ſo great a dread of ſcum, as is entertained by other perſons, or he would not have allowed the water to remain on a meadow "a fortnight or more" towards the end of the month of February.

"Froſts of one night, often fix the hatches in the wears ſo faſt, that they cannot be moved till the froſt breaks."

This obſtruction, to the direction above given, namely, "taking the water off in the day, and turning it over at night," does not often occur in Glouceſterſhire, for the wears are, there ſeldom made with hatches; but are generally conſtructed in the ſimple

way, which I ſhall hereafter deſcribe. This ſhews one advantage that the latter has, over the Dorſetſhire dam, that a part of it can always be removed at pleaſure, and the water ſunk or raiſed as required. When the froſt, however, has given a ſheet of ice to the meadow, the above rule becomes unneceſſary, and, it is then the ſafer way to diſcontinue floating, for a ſevere froſt when the water is kept running, often occaſions great unevenneſs in the ſurface of the beds.

The next remark which Mr. B. makes upon the contents of my firſt pamphlet, is one, for which, I ſincerely return him thanks: it is the correction of a real errour which I had fallen into, by taking my eſtimate of the expences of forming one of theſe meadows from two improper inſtances, which had lately occurred, and in both which, nature herſelf had already nearly laid out the land to the hand of the floater. I there ventured to fix the probable expence of thus forming a meadow; and have ſince diſcovered, that I had ſtated it very much

too

too low; and that it cannot be predetermined, but muſt depend upon a variety of attendant circumſtances; though, in general, it will be between three and ſix pounds per acre.

P. 119, Mr. B. comparing the value of the Dorſetſhire meadows, with that of the Glouceſterſhire, ſays, " the ſpring feed is on an average, let for about ten ſhillings an acre. If ſituated near towns, butchers will give more. The after-math from ten to fifteen ſhillings; rarely more. The value of the graſs (uncut) for hay, differs exceedingly; the herbage, quantity, quality, ſituation, and demand for it, occaſions a difference from thirty ſhillings to three pounds an acre. Water meadow lands let, unleſs in very particular ſituations, from five and twenty to five and forty ſhillings per acre, detached from any other land, and then the occupier has the liberty to ſell the hay."

From

From theſe ſpecimens of the produce and value of the Dorſetſhire meadows, their inferiority appears manifeſt and conſiderable. "This ſtatement" ſays Mr. B. "compared with that in the pamphlet before referred to, will plainly ſhew the vaſt difference in the nature and value of the ſoils in their unimproved ſtate."

I am by no means willing, however, to concede to Mr. B. that the great ſuperiority of the Glouceſterſhire meadows over the Dorſetſhire, can ariſe from the difference that ſubſiſted in the quality of the ſoils before they were floated; for the ſoils of the beſt of our meadows, is, in general, of that very kind which Mr. B. ſeems almoſt to contemn; I mean ſtrong clay and boggy ſoils. The beſt meadow in the pariſh to which I allude, is entirely a ſtrong cold clay; and the hay that is cut from this meadow, will fat an ox as ſoon as the beſt upland hay in the neighbourhood, though it is an excellent grazing country. This meadow is the beſt in the pariſh, merely, I

preſume

preſume to ſay, becauſe it is the higheſt upon the ſtream, and being well attended to, is the firſt that receives the water, after it is enriched by the waſh of the ſtreets, &c. of the town of Cirenceſter. There is, I ought to obſerve, another pariſh intervening between South Cerney and Cirenceſter, that has ſeveral large meadows, which, when they have due attention paid to them, are ſtill more fertile than that above mentioned, and are perhaps, at this time, the beſt floated meadows in the kingdom. I will venture to ſay, that theſe meadows, in this wet and very favourable ſeaſon, provided they were floated, as they ought to be, at the beginning of November, are, at the time that I am writing this, namely the twenty-fourth day of December, 1798, covered with a crop of graſs at leaſt four inches deep: and this graſs, we may reaſonably ſuppoſe, will receive additional ſtrength and firmneſs before the beginning of the month of March, when, it will afford an ample paſture for ſtock, if the ſeaſon be tolerably temperate.

I ſhall

I ſhall now conclude my examination of Mr. Boſwell, Mr. Davis, and Mr. Marſhall, with ſaying, that I have taken no liberties, in my obſervations on their writings, which, I ſhall not gladly ſubmit to from them, whenever my words appear erroneous or even doubtful.

The opinions, however, of the above writers are not the only ones that are hoſtile to, what I call, the true practice of winter-floating. Wrong impreſſions are too often received and communicated by thoſe who, have ſeen the proceſs of watering, and its very extraordinary effects, in warm climates, where the practice is very different, and its objects by no means the ſame, with thoſe that a farmer has in view from it in this country. Much, in particular, has lately been ſaid of the very maſterly ſyſtem of watering practiſed in China; but, there, the object is merely to encourage the rice-crop, and the water is brought upon the land, in a certain quantity, to remain ſtagnant, till it is removed by evaporation and abſorption.

This

This practice has, likewiſe, to contend with the over refined notions of thoſe who have been taught by chemical books, that "water is the food of plants;" and that "water imbibed by plants is tranſmutable into earth;" to ſuch refinements as theſe, I can only ſay, that the practical farmer has a more compendious and more ſafe method of forming his judgement, by reaſoning from *effects*, rather than *cauſes*.

In the remarks which I have hitherto made, as preparatory to a more clear conception of the method of floating, which I am about to deſcribe, I have endeavoured to place the practice in as many different points of view as poſſible; which attempt, if it will not ſerve as an illuſtration, will, I hope, at leaſt, promote the diſcuſſion of a practice, which is as deſerving of the conſideration of the agricultural world, as any that has of late engaged their attention.

The METHOD *of forming a floated Meadow.*

Before I begin to point out the particular mode of forming a floated meadow; ſuch queſtions, as the following are neceſſary to be propoſed: Will the ſtream of water to be employed in floating, admit of a temporary wear or dam acroſs it? Can you dam up, and raiſe the water high enough to flow over the ſurface of your land, without flooding and injuring your neighbours' adjoining land? Or, is your water already high enough, without a wear; or, can you make it ſo, by taking it out of the ſtream higher up, and by the conductor, keeping it up nearly to its level, till it enters the meadow? And can you draw the water off your meadow as quick, as it is brought on? If you are free from all objections of this kind, you may proceed in the following manner:

In

In the firſt place, when the deſcent is not ſufficiently great to be determined by the eye, take an accurate level of the ground intended for floating, and compare the higheſt part of it, with the height of the ſtream of water to be uſed. Aſcertain how many inches fall, there are, from the ſurface of the water, to the higheſt part of the land: if the higheſt part of the land, be adjoining to the ſtream, the proceſs is eaſy; but if, as it often happens, it be diſtant from, or the fartheſt part from the ſtream, the execution becomes more difficult; as it is neceſſary, that the ſides of the ditch which introduces the water, ſhould be raiſed all that diſtance, and kept high enough to carry the water to the aforeſaid higheſt part. In this caſe, cut, in as direct a line as circumſtances will allow, a wide ditch, or maſter-feeder, keeping up its banks, not upon a dead level, but with a gradual deſcent from beginning to end. Suppoſing the higheſt part of the meadow to be one hundred yards diſtant from the ſtream, and you have five inches fall in that diſtance, you are to

give to the whole length, an equal degree of deſcent, that is, to each twenty yards, one inch fall, and then every drop of water will be kept in equable and conſtant motion.

Sometimes the land has a very uneven ſurface, and there are two or more parts of it conſiderably higher than the reſt; it will then be neceſſary, as in plate 2, to give to each higher part its reſpective feeder. It will be found, that one feeder made diagonally, and two others in different directions, ſomething ſimilar to plate 2, will, in general, with the aſſiſtance of the ſmaller works, whatever be the form, or ſituation of the meadow, be competent to effect a regular diſtribution of the water over the whole ſurface of the land.

The width of each feeder, depends upon the number and length of the ſmaller ditches, or floating gutters, which it is to ſupply with water.

The depth of each feeder, ſhould be regulated, by the depth of the ſtream, and the loweſt part of the land; i. e. it ſhould always be made as deep as the bottom of the ſtream, if any part of the land be low enough to draw the water from that depth.

The ſoil that is thrown out in forming the feeders, is placed along the ſides of them where wanted, and is always trodden down firm, and with an even deſcent, on the upper part of the adjoining bed.

A flood-hatch is placed in the mouth of each feeder, in order to admit, or exclude the water at pleaſure; and to enable the proprietor, to float the different portions of the meadow alternately, when there is not water enough for the whole.

The next part of the proceſs, is, that of forming the ſecond order of ditches, or the floating gutters. Theſe are to be cut from, and at right angles with the above feeders, provided the ſurface of the land be

be tolerably even, as in plate 1; but, if the ſurface be very uneven, they may be made irregularly along the higher parts of the ground. The diſtance of theſe gutters from each other, muſt be determined by the abundance or ſcarcity of water. When water is plentiful, they ſhould never be made, at a greater diſtance from each other, than ten yards; but, when it is ſcarce, it is neceſſary, in order to ſtrain the water to the utmoſt, to cut them at nearly twice this diſtance, or to make one gutter where two are deſirable. It is to be obſerved, that theſe gutters are to be made with the ſame regular deſcent, as the feeders; and that both become gradually narrower as they proceed, as in the plates: for the quantity of water becomes leſs and leſs, by ſome flowing conſtantly over the ſides, and ſome being drawn off by the ſmaller ditches.

The earth that is thrown out, in digging the floating-gutters, is to be placed on each ſide of them, where moſt wanted, in ſuch a regu-

a manner, as to afford, an even ſurface, and a regular deſcent to the beds, which conſtitute, what is called, a ridge. In plate 1, fig. 1, I have endeavoured to repreſent a ridge of a meadow, in this its firſt rude ſtate of formation, and in fig. 2, I have attempted to exhibit it, in that ſtate of perfection, which, it will acquire in a courſe of years. If there are, but few inches fall from the uppermoſt end of theſe gutters to the loweſt part of the land, uſe as little of this deſcent, as you well can in the gutters, and reſerve the greater part for the ſides of the ridge, that the water may flow down them with the greater rapidity; for it is more requiſite that it ſhould flow quickly over the beds, than in the gutters, though in them, it ought never to ſtagnate.

If, in cutting the above works, any very low part, or deep ditch obſtruct the progreſs, it will be eaſy to carry the water over it, by making a continuation of the

feeder

feeder or gutter with a few boards nailed together.

If a road or ſmall eminence oppoſe the extenſion of your works, this obſtacle, likewiſe, will readily be removed, by conveying the water underneath, by means of a trunk; conſiſting of four ſtrong boards nailed together; leaving a paſſage of ſufficient dimenſions, to give the water a free current. A drain, is not unfrequently carried under the other works, by a trunk of this kind.

Having thus completed all the ditches, which are neceſſary to introduce, and ſpread the water, theſe will ſhew, where the drains are to be made, to receive, and to carry off the water, as faſt as it is brought on. One drain is to be cut between every two gutters, parallel to, and equidiſtant from each, if the evenneſs of the land will permit; if not, they are to be made, according to the irregularity of the loweſt parts of the meadow. Each drain

drain may be made, as deep as you pleaſe. The drains are made in an order, which, is the reverſe of the preceding works; they are narroweſt at the higher part of the meadow, where the other ditches are wideſt, and gradually increaſe in width, as is repreſented in the two firſt plates, till they deſcend into the maſter-drain, which returns the water into its uſual channel.

The maſter-drain ſhould always, either by depth or width, be made capable of carrying off as much water, as the feeders introduce, ſince it nearly receives as much; for, on a well formed meadow, leſs of the water will ſoak into the ſoil, than is generally imagined, eſpecially when the water is muddy and leaves an unctuous ſediment on the ſurface, which, happily prevents ſoaking.

Having thus completed the formation of the various ditches, having pared down every ſmall unevenneſs on the ſurface, and

given to each part of the meadow its appropriate fall; let in the water, and you will find that it will flow on towards the ends of the floating gutters, and will ſeldom ſpread itſelf, as you wiſh, on the higher parts of the meadow. This is to be remedied, by placing ſtops, or obſtructions, in the feeders and floating-gutters, at diſtances proportioned to the deſcent of the land. When the velocity of the water is great, the ſtops of courſe, will be numerous. A ſtop is uſually made, by driving down a few ſtakes, in a line acroſs the ditches which diſtribute the water; and may be encreaſed, by placing a board, clods of earth, &c. at the front of the ſtakes. By the obſtruction, which theſe ſtakes, &c. give to the courſe of the water, it is checked in its progreſs, and is raiſed, and kept up to a proper height, either to flow over the ſides of the ditches, or through ſmall notches cut in their ſides, at the diſtance of about a yard from each other; as I have endeavovred to repreſent in the plates. Indeed, the contraction in the

width

width of the feeders and gutters, ſerves to raiſe, and force back the water over their ſides; but, this is not a ſufficient obſtruction when the deſcent is conſiderable. Stops and notches, have hitherto, been thought indiſpenſibly requiſite, in the conſtruction of theſe meadows; but, I have lately been informed, by one of the above ſkilful floaters, that he, in the laſt ſpring, formed a meadow, which diſtributes the water with the utmoſt regularity, without the aſſiſtance of either ſtop or notch. The proprietor of this meadow, (Mr. Talbot, of Penrice Caſtle in Glamorganſhire,) who, ſeems to have viewed the practice, with no common degree of penetration, finding that his land, and his ſtream were properly ſituated for the purpoſe, was determined, whatever might be the expence, to have a floated meadow, complete in all its parts, and from which, even the appearance of imperfection, ſhould be excluded. Orders were accordingly given, that the land ſhould be formed into ridges of ten yards width; that each feeder and gutter, ſhould have its

appropriate deſcent of one inch in nine yards; and that each bed, ſhould be a perfect inclined-plane, with two inches fall in each yard. This plan was ſtrictly obſerved, and every inch of the ground was worked by line and level, and, when the ſurface was grown ſufficiently firm, the water was admitted, and was found, to flow over every part, in a ſheet of equal depth, without any other check than what aroſe from the gradual contraction in the width of the gutters.

This meadow is, probably, the moſt perfect in its formation of any in the kingdom, but, that it will, therefore, be the moſt productive, I dare not venture to predict; for fertility depends more on other cauſes, than on exquiſite nicety of conſtruction. There is no doubt, however, of this meadow's affording an abundant remuneration to its owner; though the expence muſt have been great, as the land, before it was formed into a meadow, was little better than a bed of ruſhes; but

will

will now, I am told, be worth three pounds per acre. This ſpecimen of perfection, however, is not here introduced as a general model, but, only for the imitation of ſuch gentlemen, as enjoy the ample means and liberal mind of Mr. Talbot.

There is ſtill an inferiour order of ditches, called trenches, requiſite in the art of floating; whoſe office it is, to convey the water to any part of a meadow which the larger ditches will not effectually reach, whether it be to the extreme angles of the ridges, as is repreſented in plate 1, T. T. or to any part in a wide and imperfectly formed bed, which, is higher than its general ſurface. A trench of this ſort, is cut, from the floating gutters, about ſix or ſeven inches wide on the ſurface, and terminating at the bottom in nearly a right angle; and the portion of earth, which, is thus cut out, is regularly laid unbroken along the lower ſide of the trench, both to keep up the water to its deſired height, and to be reſtored and trodden down with the turf

turf uppermoſt, when the floating is finiſhed, into the ſpace which it before occupied. When the ſoil is thus replaced, the green-ſward, is not only not injured, but is improved by this cutting; for an extraordinary luxuriancy is always diſcernible, in the hay crop, in the line in which the trench was made, owing to the mud, which, is ever found abundantly depoſited at the bottom of each trench.

I deem it wholly unneceſſary to give any directions for the conſtruction of water-hatches, or flood-hatches, either as ſometimes forming a part of the wears, or as requiſite to be placed in the mouths of the feeders, as in plate 2, F. 1, 2, 3; for the common carpenter, in every village in the kingdom, muſt have ſeen them, and is capable of making them. One caution, however, may not be amiſs; that care be taken that the frame and foundation of them, be deeply and firmly bedded in puddled gravel, or well-rammed clay, and both the ſides, and bottom of them be caſed with ſtone

ſtone or boards; for if the water once finds a paſſage either under, or by the ſides of theſe erections, it will ſoon become powerful enough, to blow up the whole work.

Wears or dams are generally recommended upon an expenſive plan, with two, three, or more hatches; but, I have ſeen wears in different parts of the kingdom, of a more ſimple make, and yet equally ſtrong, and perfectly adequate to the purpoſe of a dam, though conſtructed at one fifth part of the expence of the others: it is therefore, my duty to recommend theſe in preference to the others, eſpecially in thoſe inſtances, where the whole charge falls upon a mere renter of the land. I have frequently ſeen a ſtrong and effectual frame of a wear, compoſed only of two rough pieces of timber, and a few ſtakes, in the following manner: one of the pieces of timber, or beams, was laid acroſs the bottom of the ſtream, below the water; the other acroſs the top, above the water, each beam having its ends firmly fixed in the banks on each

each ſide of the ſtream; and the ſtakes were placed in a perpendicular direction to the front of theſe beams, the lower end of each ſtake reſting in a deep groove cut along the uppermoſt ſide of the lower piece of timber, and the upper end of each ſtake bearing againſt the upper piece of timber. For the poſition of the uppermoſt beam, and the upper ends of the ſtakes, ſee the wears acroſs the ſtream in plates 2, 3. The lower piece of timber, in this caſe, is always placed a few inches higher up the ſtream, than the upper one, that the ſtakes may ſtand perfectly upright, at the ſame time that they bear againſt the uppermoſt piece of timber. Having thus obtained the out-works, or frame of a wear, it will be no difficult matter to fill up, and complete it, with a variety of materials, ſuch as each ſituation ſhall moſt conveniently furniſh. When the ſtream, which is to be obſtructed, or diverted by a wear, is as much, as three or four yards in width, it is generally found requiſite, to complete it, by placing portions of

boards

boards to the front of the ſtakes, nailed together, in quantities agreeing with the dimenſions of the ſtream; but when the ſtream is of leſs width than three yards, it will be thought ſuperfluous, to give any directions reſpecting the materials which ought to be uſed in a wear. Behind each wear and flood-hatch, a board or plank is always laid over the ſtream or feeder, for the perſon to ſtand upon, who is to make, or regulate them.

If there be any further directions ſtill required to give a clear conception of the art of floating, I hope, they will be found in the following deſcription of the plates.

A Deſcription of the Plates

PLATE I.

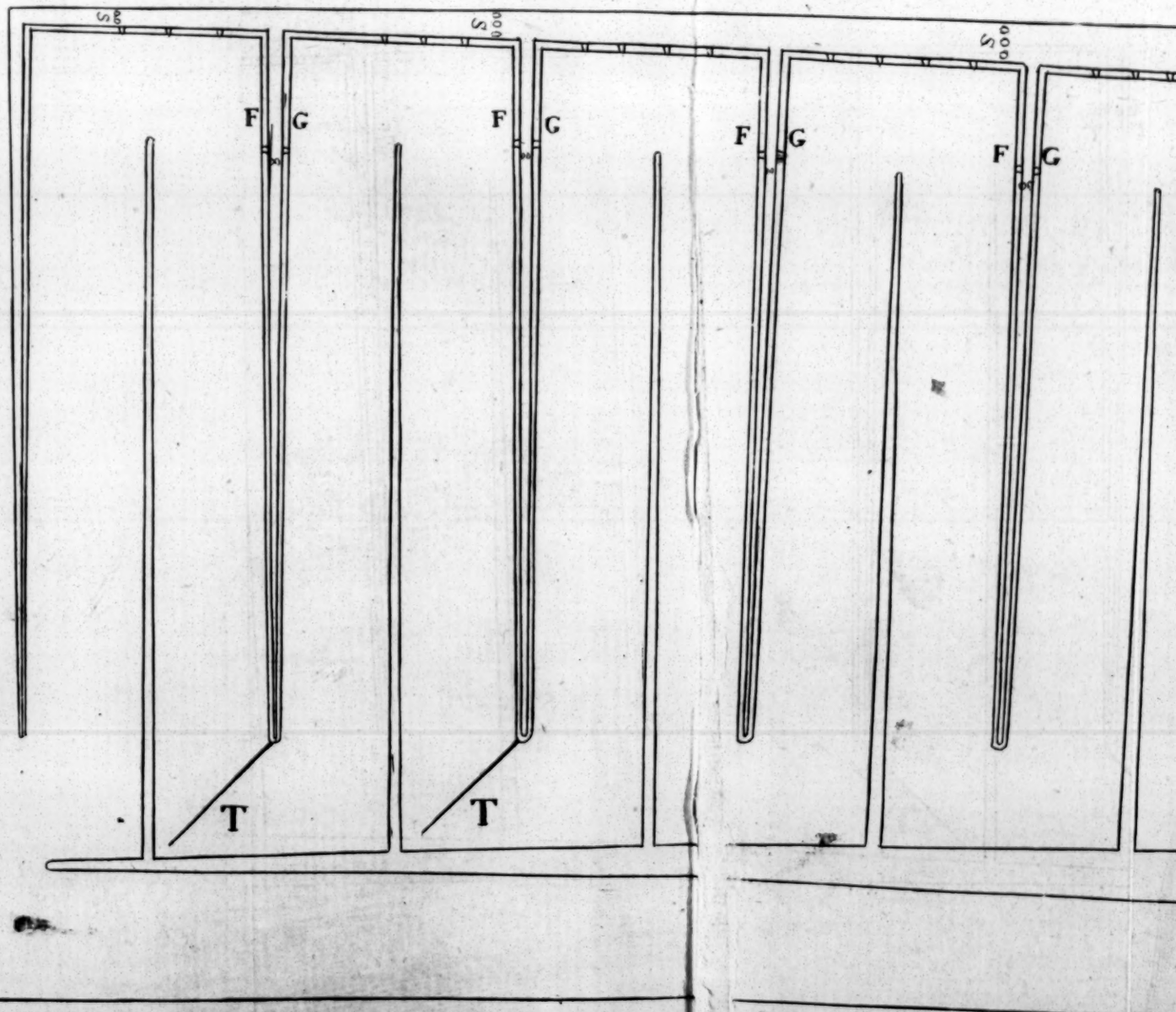
By Plate 1, I have endeavoured to repreſent a meadow, which has no material irregularity in its ſurface, but has one gradual deſcent, in the ſame direction with the current of the river or ſtream. This meadow is ſuppoſed to be too high to be floated from that part of the ſtream which is neareſt, and immediately oppoſite to it; and therefore, in order to gain fall, or power, the water is taken out at a higher part of the ſtream, and conveyed by the conductor, marked C. into the feeder, which has a flood-hatch placed in the mouth of it, to admit or exclude the water at pleaſure. This conductor, (we will ſay, for the ſake of illuſtration,) has only four inches deſcent, in its whole length, but the ſtream in the ſame diſtance, falls ten inches; therefore, ſix inches of power are gained by means of the conductor, which power, or fall,

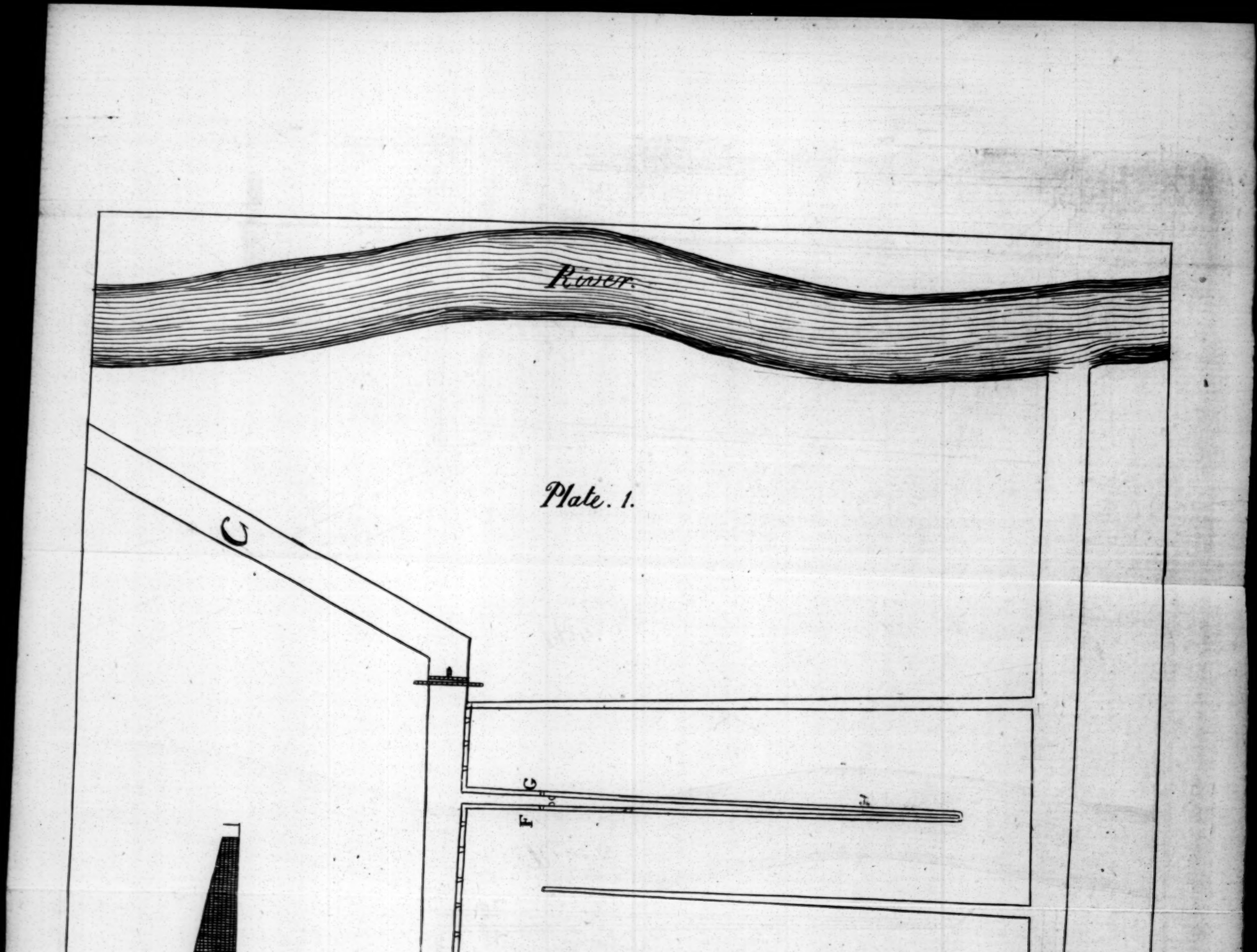
is



Fig: 1.

Fig. 2.




River.
Plate. 1.
C
G
F

is abundantly ſufficient for the floating of the meadow. This mode of gaining or reſerving deſcent is well worthy of public attention, and if generally adopted, would bring thouſands of acres within the fertilizing power of this practice, which, are now thought to be utterly beyond the reach of the water. I have ſeen water thus conducted, for more than the diſtance of a mile, which has afterwards amply compenſated for the expence of the work. The feeder is here cut along the higher part of the meadow; and from it, at right angles, the floating gutters are made to branch down the deſcent of the meadow. The floating gutters, I have marked with a double line, in order to ſhew more plainly the ſummit of the ridges, along which they proceed; and all the ditches deſcribed by ſingle lines, are drains which receive the water, after it has paſſed over the ſides of the ridges or the beds, and convey it into the maſter-drain, which empties itſelf into the bed of the ſtream, at the loweſt corner of the meadow. One drain, as is

ſhewn in that which is neareſt to the flood-hatch, ſhould, in every meadow, have ſo near a communication with the feeder, that, when the water is to be taken off, the hatch may be let down, and the mouth of this drain opened, and then every bed will almoſt inſtantaneouſly be laid dry, and no water long remain in the ditches, to ſoak into the land. I have repreſented the ſtops, which are required in the feeders and floating gutters, by ſmall circles and the letter S. The ſtrong lines drawn from the lower end of two of the floating gutters, and marked T. T. are meant to ſignify two ſhallow ditches called trenches, whoſe office, it is to carry the water to the corners of the beds, which otherwiſe would not reach them.

To float ſuch a piece of land as this, where the declivity is gentle, and all one way, can be no very difficult taſk one would think, even to a perſon who has never ſeen the practice.

By

By Fig. 1. in this Plate, I mean to repreſent a tranſverſe ſection of a ridge, made on a flat ſurface, in its firſt year of formation, when it is only raiſed a little in the centre, with the ſoil that is dug out in making the floating gutter and drains, and has juſt deſcent enough to throw the water into the drains.

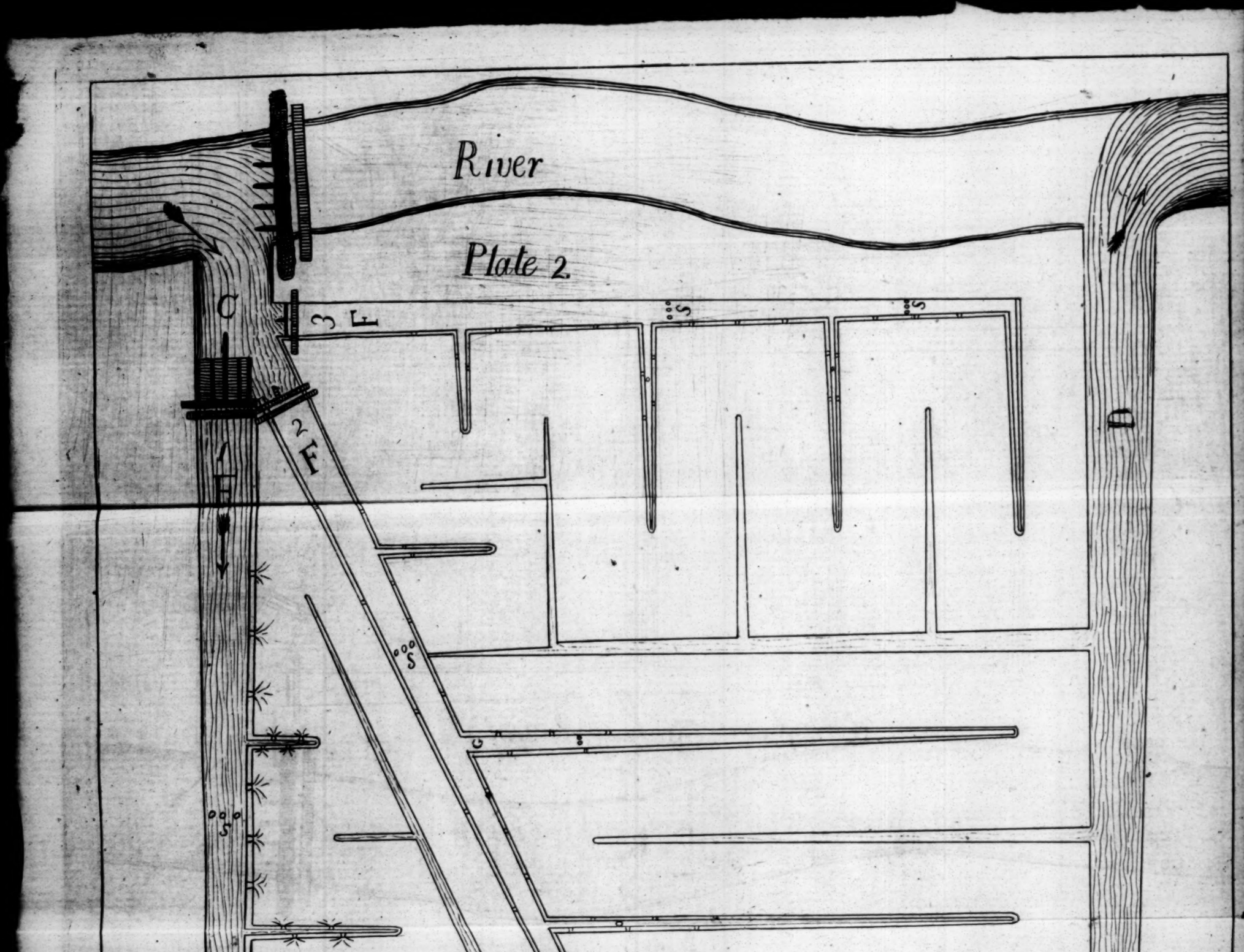
Fig. 2, in this Plate, is meant to denote a ridge, in its full and complete elevation, with its ſides or beds a perfect inclined plane, with the deſirable fall of about two inches in each yard.

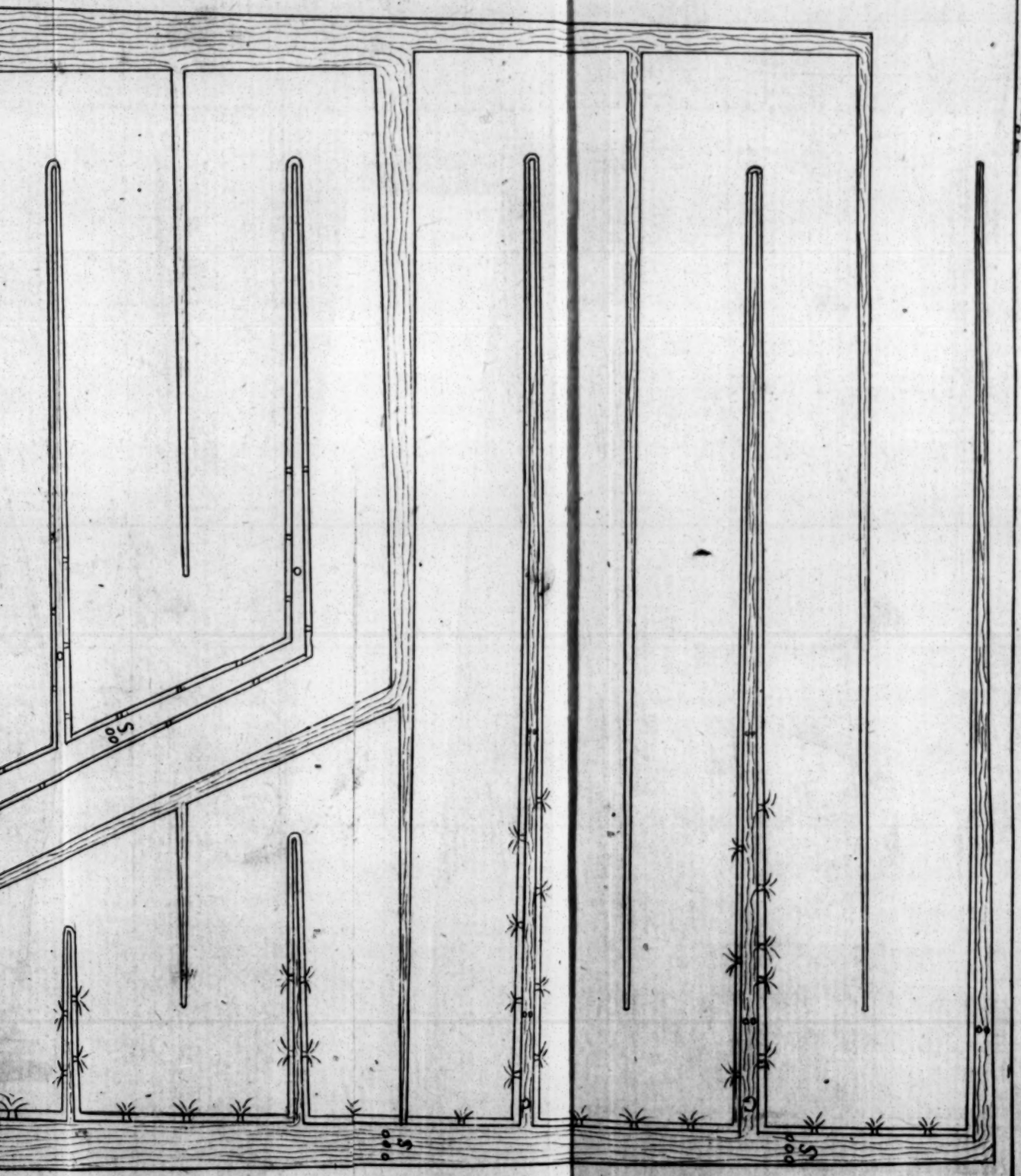
PLATE

PLATE II.

In Plate 2, I have attempted to delineate a floated meadow, formed from a piece of land which had an irregular ſurface, or which had three parts conſiderably higher than the general ſurface of the land. In order to throw the water over theſe higher parts, it was neceſſary that each ſhould be accomodated with a ſeperate feeder, as is ſhewn in F. 1, F. 2, F. 3, and that each of theſe feeders, ſhould be ſo conſtructed, as to ſuffer the water inceſſantly to paſs over the whole length of its ſides, and into the floating gutters; and, at the ſame time, to convey water enough to cover theſe diſtant parts. In this inſtance, the ſtream, by means of a dam erected oppoſite to the higher corner of the meadow, is found to be high enough to overflow every part of the ſurface, without the neceſſity, as in Plate 1, of fetching the water from a higher part of the ſtream. In this Plate, I have endeavoured to exhibit one feeder

in


River
Plate 2.
C
3 F
2 F
S
S
S
S
S
D



in the act of diſtributing the water. By means of the wear or dam, which, it will here be ſeen, is made ſo complete, as not to ſuffer any water to flow down its uſual channel, the whole ſtream is diverted and made to paſs through the conductor, and through the uplifted hatch into the feeder F. 1, where meeting with the obſtruction of the ſtops, it is forced into the floating-gutters, and over the left ſide of the feeder, or through notches, or ſmall appertures, which I have repreſented as ſpreading the water, not only from the feeder, but likewiſe from the floating gutters. It will here likewiſe be ſeen, in what manner the drains unite in conveying the water into the maſter-drain, which reconducts it into its wonted courſe. The bed of the river below the wear, it will here be obſerved, is entirely free from water or empty; therefore, the returning water has that depth of the bed of the river, added to the deſcent which is found in the diſtance between the wear, and the mouth of the maſter-drain. The hatches in the mouths of F. 2, F. 3,

are ſhut, and no water of courſe is upon that part of the meadow, which they are made to float; when, however, that part which is ſupplied by F. 1, has had the water a ſufficient time, its hatch will be let down, and theſe two opened; for the ſtream will afford water enough for F. 2, and F. 3, at one turn, as they both do not ſupply a greater extent of floating-gutters than F. 1, ſupplied. Thus, in this meadow, the proceſs of floating may conveniently be alternate through the whole winter.

Plate

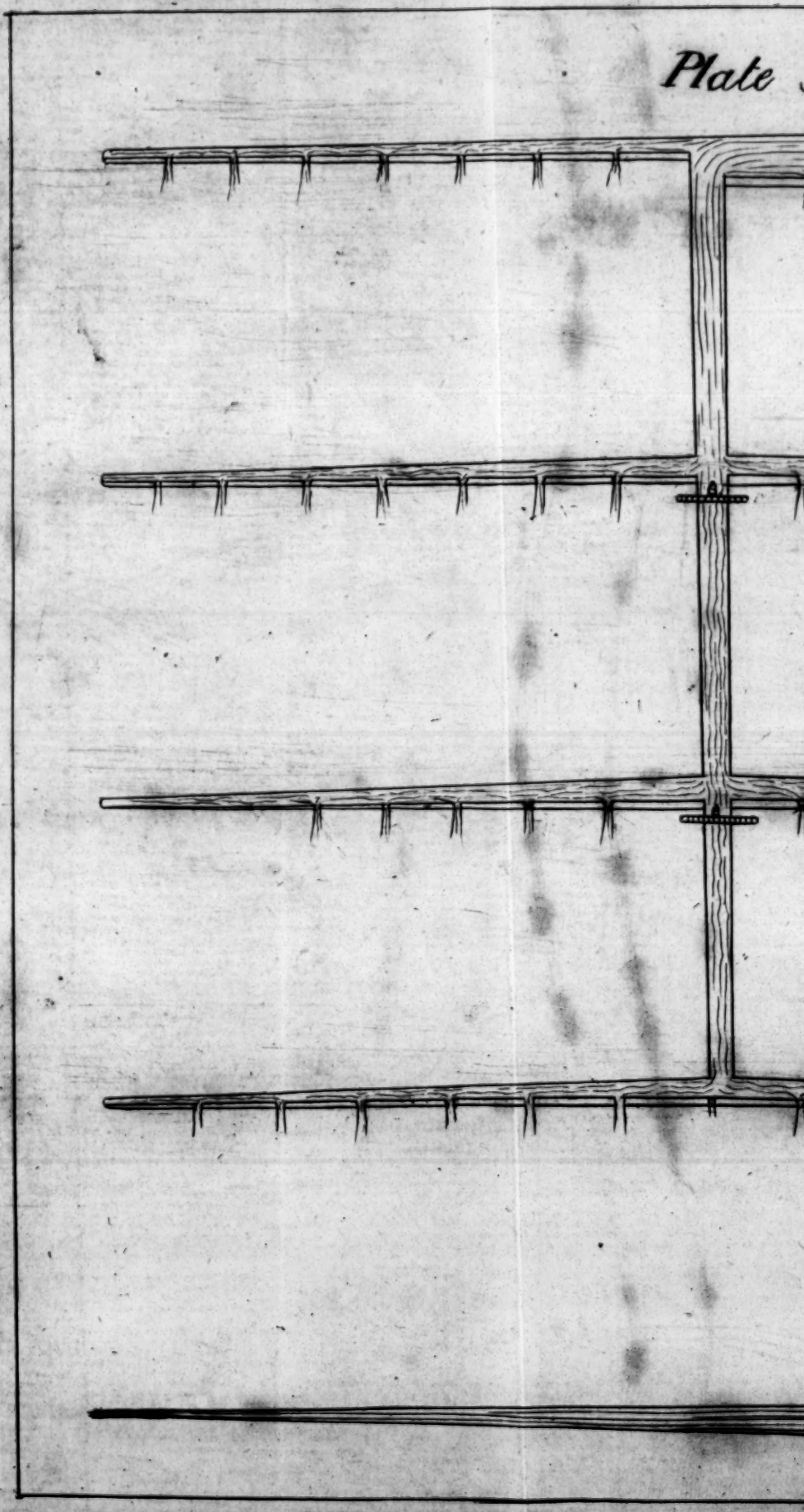


Plate 3.

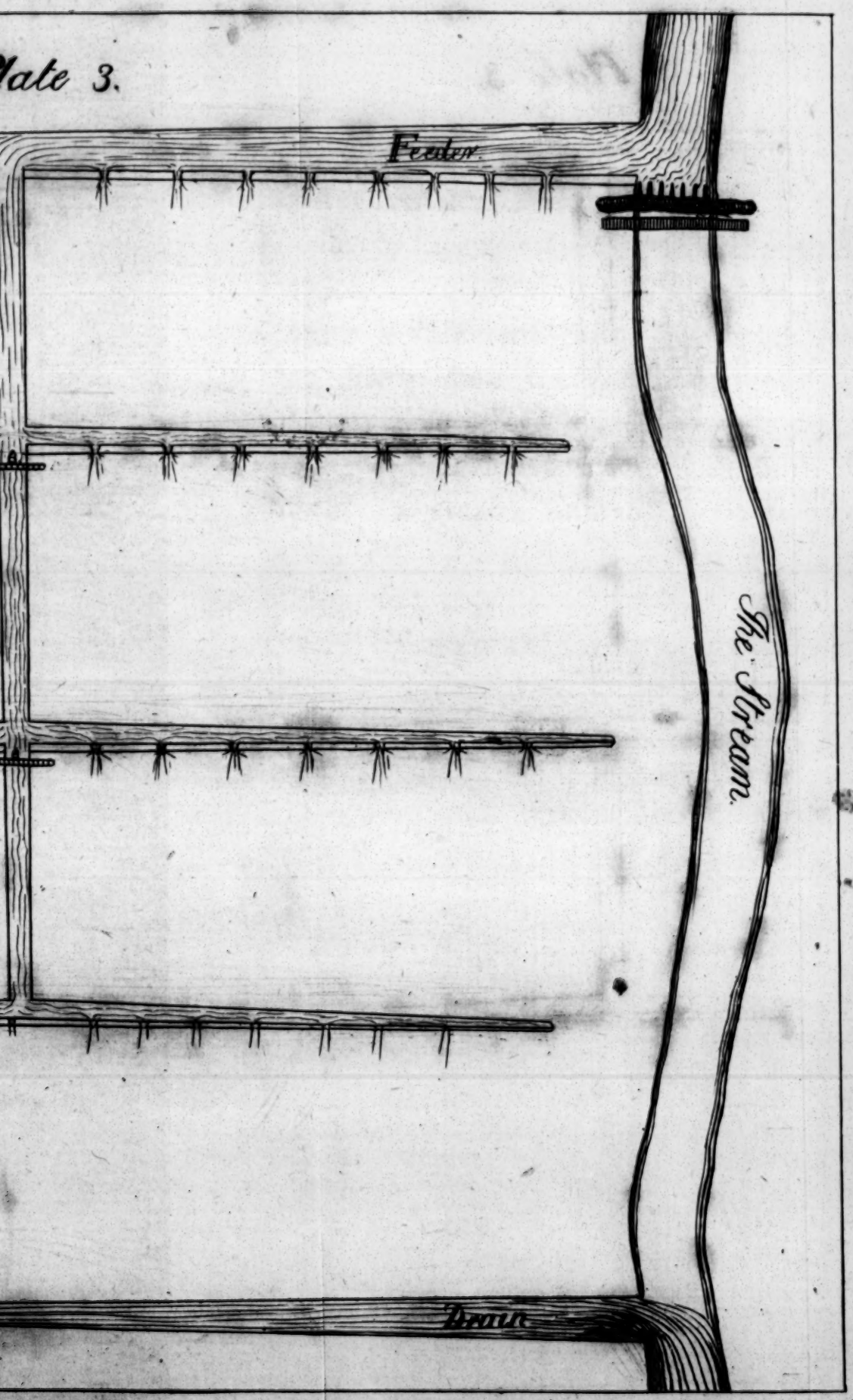


PLATE III.

In Plate 3, I have given a ſketch of a ſpecies of floating, commonly called catch-work, a ſpecies, very different from that which I have deſcribed and recommended above, and which ought never to be adopted when the other plan is practicable. In ſome ſituations, however, the declivity of the land is too great to admit of its being thrown into ridges, with their reſpective floating-gutters pointing down the deſcent; and, therefore, it becomes neceſſary to make the diſtributing ditches at a certain diſtance below each other, *acroſs* the declivity, to catch the water, again and again, from the top to the bottom of the meadow. It is evident, that the contents of the water thus repeatedly uſed, are not equitably diſpoſed of, for the upper beds muſt receive more than their ſhare of whatever nutriment it depoſits. The beſt method which I have ſeen of adjuſting this inequality of diſtribution, is the following: to continue the

feeder down the centre of the declivity to the laſt bed, and then by means of ſmall hatches placed below the ditches, as in the plate, which are ſo contrived, as to ſuffer a certain quantity of water to paſs through them, ſome of the firſt and beſt water, is conveyed unuſed even to the loweſt bed. Theſe hatches likewiſe give a power of floating the beds alternately, or of throwing the water over the firſt and third, and laying the ſecond and fourth beds dry, or vice verſâ.

I am ſorry to ſay, that I have ſeen the common plan of catch-work watering reſorted to, when there was no abſolute neceſſity for its adoption, when there has been no rapid deſcent in the land to demand it; I have ſeen it uſed, merely becauſe it was leſs difficult in the execution, than the other ſyſtem, and becauſe it did not require ſo great a number of ſtops, which, Mr. Boſwell ſays, page 124, "Would offend the eye greatly." I confeſs that I am not one of thoſe who view ſtops, in a meadow,

in

in the light of a deformity, but rather one of thoſe who think that nothing can tend to disfigure a meadow that is inſtrumental in producing a good crop of graſs. When I ſee a great number of ſtops, I know, that the water flows with its proper rapidity and quantity, and will have its profitable effect.

This plan will immediately be underſtood upon viewing the plate, and is eaſily executed. I have introduced notches here, as well as in the other plates, not as abſolutely neceſſary in either plan, but as giving a facility in the execution of each. The place of the notches is not certain or fixed, but variable at pleaſure.

Directions to be obſerved in each Month of Floating.

At the beginning of the month of November, each work or ditch, in one of theſe meadows, ſhould be well cleanſed of all weeds and long graſs which are found in it, and ſhould have its ſides or banks well repaired, where they have received injury from the treading of the cattle. The after-math is, of courſe, before this time, eaten off bare. I was in Glouceſterſhire in the laſt week of the month of October, and ſaw moſt of the floated meadows, in the pariſh of South Cerney, in a ſtate of preparation for the water; and ſome of them I found had already taken advantage of the heavy rains that were then falling; and were completely floated. The reaſon which the farmers gave me, for their thus taking the water earlier than uſual, was, that they are now under the hard neceſſity of catching the water when they can, whenever abundant rains ſhall give them an opportunity;

portunity; for the Thames and Severn-Canal, which, unfortunately croſſes them above the meadows, in every dry ſeaſon, takes, and diverts the whole of the ſtream to ſupply its own locks. Thus the regularity of their ſyſtem of floating, is not only interrupted, but ſometimes prevented for a whole winter, and the loſs is incalculable: and will not any one be aſtoniſhed, who ſhall be told, that for this deprivation, the occupiers of the meadows have no compenſation made them; although the mills, which are ſimilarly ſituated, and which, comparatively, are of paltry conſideration, receive ſome of them ninepence, ſome a ſhilling, for every hour in which the water is taken from them by the canal. In the month of November, the water may be ſuffered to continue flowing over the meadow for about three weeks without intermiſſion, and then the land ought to have air given it for a few days; for there are few ſpecies of graſs, eſpecially thoſe which form the moſt nutritious part of the herbage of meadow land, that will

long

long exiſt under an entire immerſion in water. In thoſe meadows, however, which have had all due attention of this kind paid to them, and which enjoy a quick deſcent, I have generally diſcovered moſt of the graſſes, which are found in the adjoining upland, even the white-clover not excepted. The great object of this early preparation of the meadows, is to take the advantage of the autumnal floods, which bring along with them a great variety of putreſcent matter, which is found peculiarly enriching to the land.

In the months of December and January, the chief care of the floater, conſiſts in keeping the land ſheltered by the water from the ſeverity of froſty nights. It is neceſſary, however, through the whole of theſe months, every ten days or fortnight, to give the land air, and to lay it as dry as poſſible, for the ſpace of a few days. Whenever the froſt has given a complete ſheet of ice to a meadow, it is adviſable to diſcontinue floating, for the froſt will

ſome-

ſometimes take ſuch ſtrong hold upon the land, as to draw it into heaps, and very much injure the evenneſs of the ſurface of the beds. It is requiſite in theſe two months, that each meadow ſhould be inſpected, at leaſt, once in every week, to ſee that the equal diſtribution of the water, is not obſtructed by the continual influx of weeds, leaves, ſticks, and the like.

In the month of February, a more than common degree of attention is required by the floated meadow. If you now ſuffer the water to flow over the meadow for the ſpace of many days without intermiſſion, a white ſcum is generated, which is found very deſtructive to the graſs; and if you now take off the water and expoſe the land, in its wet ſtate, to a ſevere froſty night, a great part of the tender graſs will be cut off. In Glouceſterſhire, two methods of avoiding theſe injuries are practiſed: one is, to take the water off by day, to prevent the ſcum, and to turn it over again at night, to guard againſt the froſt; the other method is,

is, to take the water off early in the morning, and if that day be dry to ſuffer it to remain off for a few days and nights; for if the land experiences only one drying day, the froſt at night will do little injury. The former of theſe practices, where it is found not too troubleſome, is preferable to the latter; and the ſimply conſtructed wears of the above county, are well calculated for the adoption of this rule, ſince any part of them is removable at pleaſure, whatever may be the ſeverity of the froſt. About he middle of this month, the floater begins to uſe the water rather more ſparingly, than in autumn or winter, for his chief object now is to encourage or force vegetation.

At the beginning of the month of March, the crop of graſs on the old floated-meadows, will generally be ſufficient to afford an abundant paſturage to any kind of farming ſtock, and the water is taken off for nearly a week, that the land may become dry and firm, before the heavy cattle are admit-

admitted. It is proper, in the firſt week of eating off the ſpring-feed, if the ſeaſon be cold or rainy, to give the cattle a little hay in the evening, to intermix with their moiſt food. Some farmers, very diſcretely, give the ſpring-graſs of their meadows to their ewes and lambs, in the ſame manner as their crop of turnips, by allotting them a certain portion each day, by means of hurdles or flakes, and giving them hay at the ſame time. This is certainly making the moſt of the graſs, and an excellent method of fining and ſweetening the future herbage.

In the month of April, the graſs of theſe meadows, may be eaten off as ſhort and cloſe as you pleaſe, but never later; for if you treſpaſs only one week upon the month of May, the hay crop will be very much impaired, the graſs will become ſoft and woolly, and have more the appearance and quality of latter-math hay, than hay of the firſt crop.

At the beginning of the month of May, the water is again thrown over the meadows for a few days, which, as a mere wetting of the land, will, in moſt ſeaſons, inſure the hay crop; will inſure in the courſe of ſix or ſeven weeks, a ton and a half of hay upon an acre, which is as much as will be deſired by any perſon who pays a due regard to the quality of his hay. The water is ſometimes again uſed, when the hay is carried off; this however will depend upon circumſtances, and is to be done at the diſcretion of the proprietor, who will take care that ſheep do not eat the latter-math. Water, which is rendered turbid by ſudden and impetuous rain, in the ſummer months, I know from experiment, is peculiarly enriching to a floated meadow.

We hear of inſtances, in other countries, of two or more crops of hay being reaped from the ſame watered-meadow, in the ſpace of one year; but, in this iſland, the man

man who conſults the good of his land, or eventually his own true intereſt, will be contented with one hay-crop in each year.

Anſwers to Objections.

IT may not be improper, before I conclude to make ſome reply to a few objections which are too often made to the practice of floating. The moſt weighty of theſe objections, is the expence neceſſarily incurred in executing the work, and the waſte of land in cutting ſo many wide ditches. To both theſe objections, one ſatisfactory anſwer, I preſume, may be given: that although even a fourth part of a meadow be conſumed in ditches, yet if the remaining three parts ſhall produce at leaſt twice the crop which the whole land before produced; there is no room for complaint either of loſs of land, or that five or ſix pounds per acre, have been expended upon the meadow.

Another objection ariſes from an apprehenſion, that this uſe of the water will give encouragement to the growth of ruſhes. In anſwer to this objection I can ſay, that

that the effect is found otherwiſe; for this practice is never known to propagate ruſhes; and in land where they before prevailed, by the very frequent occurrence of its deep drains, it tends powerfully to check and to deſtroy them.

Another objection to this practice ariſes from a ſuppoſed inferiority in the quality of floated-meadow hay. This inferiority however, is not the fault of the land, but of the occupier of the meadow: for many farmers too attentive to quantity, ſuffer their graſs to remain uncut till it will produce nearly three tons to an acre, and then, it naturally will become long, coarſe, and little better than ſtraw. But thoſe farmers, who are wiſe enough to cut their graſs in the month of June, and who have been fortunate enough to have uſed muddy water in the winter, will find their hay very little inferiour in quality to the beſt upland hay.

There remains another objection or rather obſtruction to this art ſtill unmentioned; which, in many ſituations, operates as a prohibition; I mean the entire power over the water of many ſtreams which is poſſeſſed by the proprietors of mills. This excluſive claim, to the great detriment of the community, prevents the improvement of numberleſs acres; but this objection, one would hope, will, ere long, be removed by the adjuſting interference of parliament.

I have thus thrown together the ſum and and ſubſtance of all that I have ſeen, heard, and read on the ſubject of watering or floating meadow land: and, if what I have here written, ſhall in any degree tend to give a clearer conception of the true practice than has hitherto been conveyed, or ſhall induce even any one perſon to try the extent of the advantage to be derived by floating from a large and rapid river, I ſhall, at leaſt, feel, that I cannot be deemed an intruder, on the preſent occaſion.

I ſhall

I ſhall ſtill think it my duty, to give any further explanation or information in my power; and if any one, imagining that he has a conſiderable tract of land capable of being thus improved, and yet ſuſpecting that difficulties may occur, which he himſelf may not be able to ſurmount, be deſirous that I ſhould ſend him a Glouceſterſhire floater; I ſhall be happy in executing ſuch a commiſſion; becauſe I imagine that I can thereby ſerve both the proprietor of the land and the floater; and at the ſame time benefit the public. A letter addreſſed to me (free of poſtage) at Mr. Scatcherd's, Bookſeller, Ave-maria-lane, London, will readily find me. The above floaters uſually charge a guinea per week and their board, and will not only take an active part in the manual labour, but will give inſtructions to as many men, as it may be thought fit to employ under their direction.

FINIS.


G.R. III.
BRITISH MUSEUM